

# Low fitness linked to higher depression and anxiety risk

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People with low aerobic and muscular fitness are nearly twice as likely to experience depression, finds a new study led by UCL researchers.

Low fitness levels also predicted a 60% greater chance of anxiety, over a seven-year follow-up, according to the findings published in *BMC Medicine*.

Lead author, Ph.D. student Aaron Kandola (UCL Psychiatry) said: "Here we have provided further evidence of a relationship between physical and [mental health](#), and that structured exercise aimed at improving different types of fitness is not only good for your physical [health](#), but may also have [mental health benefits](#)."

The study involved 152,978 participants aged 40 to 69 of the UK Biobank study. Their baseline [aerobic fitness](#) at the start of the study period was tested by using a stationary bike with increasing resistance, while their muscular fitness was measured with a grip strength test. They also completed a questionnaire gauging depression and anxiety symptoms.

Seven years later they were tested again for depression and anxiety symptoms, and the researchers found that high aerobic and muscular fitness at the start of the study was associated with better mental health seven years later.

People with the lowest combined aerobic and muscular fitness had 98% higher odds of depression, 60% higher odds of anxiety, and 81% higher odds of having either one of the common mental health disorders, compared to those with high levels of overall fitness.

The researchers accounted for potentially confounding factors at baseline such as diet, socioeconomic status, [chronic illness](#), and mental illness symptoms.

Previous studies have found that people who exercise more are less likely to experience mental illnesses, but most studies rely on people self-

reporting their activity levels, which can be less reliable than the objective physical fitness measures used here.

Senior author Dr. Joseph Hayes (UCL Psychiatry and Camden and Islington NHS Foundation Trust) said: "Our findings suggest that encouraging people to exercise more could have extensive public health benefits, improving not only our [physical health](#) but our mental health too. Improving fitness through a combination of cardio exercise and strength and resistance training appears to be more beneficial than just focusing on aerobic or muscular fitness."

Aaron Kandola added: "Reports that people are not as active as they used to be are worrying, and even more so now that global lockdowns have closed gyms and limited how much time people are spending out of the house. Physical activity is an important part of our lives and can play a key role in preventing mental health disorders.

"Other studies have found that just a few weeks of regular intensive exercise can make substantial improvements to aerobic and muscular [fitness](#), so we are hopeful that it may not take much time to make a big difference to your risk of mental illness."

**More information:** Aaron A. Kandola et al, Individual and combined associations between cardiorespiratory fitness and grip strength with common mental disorders: a prospective cohort study in the UK Biobank, *BMC Medicine* (2020). [DOI: 10.1186/s12916-020-01782-9](https://doi.org/10.1186/s12916-020-01782-9)

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